

# 1970

OPERATING  
SUMMARY

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## **PORT COLBORNE**

**water pollution  
control plant**

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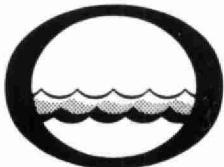
Division of Plant Operations

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*Water management in Ontario*

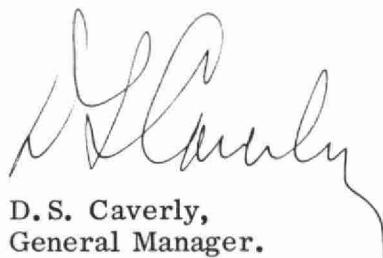
Ontario  
Water Resources  
Commission

135 St.Clair Ave.W.  
Toronto 195  
Ontario

Once again we have the privilege of submitting to you our latest detailed report on financial progress and technical activity at your water pollution control plant.

The statistical information contained in this annual operating summary will undoubtedly be a useful barometer of efficiency. Of particular interest will be the comments and recommendations of the regional operations engineer, who was intimately connected with day-to-day operation throughout 1970.

Together with the extensive cost data provided, this information should assist greatly in your general understanding of the problems met and dealt with, and in furnishing a yardstick for possible future expansion.



D. S. Caverly,  
General Manager.



D.A. McTavish, P. Eng.,  
Director,  
Division of Plant Operations.

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135 St. Clair Avenue West  
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**PORT COLBORNE  
water pollution control plant**

operated for

THE CITY OF PORT COLBORNE

by the

ONTARIO WATER RESOURCES COMMISSION

**1970 ANNUAL OPERATING SUMMARY**

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# '70 REVIEW

## GENERAL

Construction on the Rosemount area project was near completion at year end. The work involved a complete replacement of the Elm Street Pumping Station, construction of two underground pumping stations, and sewer ing of the entire area.

Difficulty was experienced in obtaining tenders for the required renovations at the East Side Plant. As a result the work was delayed and divided into two sections. Construction on phase one which involves modifications to the influent works and return sludge facilities will not take place until early 1971. E.G. Marsh Limited will be the main contractor for this work.

Modifications to the Fretz Park Pumping Station will be carried out together with the installation of standby power facilities at the Elm Street Pumping Station under one contract in 1971.

The Regional Municipality of Niagara assumed responsibility for the operation of the West Side and East Side Plants on December 1, 1970. The City owned pumping stations will be operated for the City by the Region under contract and the OWRC owned pumping stations will be operated by the Region for the Commission under an operating agreement.

## PLANT FLOWS and CHLORINATION

### West Side Plant

A total flow of 448.5 million gallons was treated, representing an increase of 12% over the previous year's flows. The average daily flow of 1.23 million gallons was 137% of the plant's design capacity of 0.9 mgd. Despite this overloading, it was not necessary to bypass at any time during the year and a good quality effluent was produced.

FLOWS	DAILY FLOW mil gal	OCCURRING IN THE MONTH OF	MONTHLY FLOW mil gal	OCCURRING IN THE MONTH OF
Average	1.23	—	37.4	—
High	2.50	April	48.5	March
Low	.80	May June Dec.	30.5	June

### East Side Plant

A total flow of 583.5 million gallons was treated, representing an increase of 11% over 1969 and 16% over 1968 treated flows. The average daily treated flows of 1.6 mg was 88% greater than the plant's design flow of 0.85 mgd.

FLOWS	DAILY FLOW mil gal	OCCURRING IN THE MONTH OF	MONTHLY FLOW mil gal	OCCURRING IN THE MONTH OF
Average	1.60	—	48.6	—
High	2.00	*	56.1	March
Low	1.20	July	42.1	June

\* Jan.-Feb.-Mar.-Apr.-July-Sept.-Dec.

A portion of the raw sewage flows bypassed the treatment facilities on a continuous basis during the year. A magnetic flowmeter will be installed in the influent works early in 1971 and will record plant flows, thus enabling a determination of bypass quantities.

### PLANT EFFICIENCY

#### West Side Plant

The average raw sewage strength was 103 mg/l and 121 mg/l suspended solids. This represents a BOD and suspended solids increase over the previous year respectively of 22 mg/l and 35 mg/l and indicates partial success by the City in removing storm water flows and infiltration from the collector system. The average effluent quality of 10 mg/l BOD and 8 mg/l suspended solids was similar to the effluent quality in 1969 and is excellent.

#### East Side Plant

The average BOD and suspended solids concentrations in the raw sewage were 77 mg/l and 99 mg/l respectively, representing an increase in the raw sewage strength of 32% BOD and 50% suspended solids over 1969. The effluent BOD and suspended solids concentrations of 9 mg/l and 12 mg/l respectively were similar to the effluent quality of the previous year and pertained only to the treated portion of the raw sewage flows. The combined treated and untreated effluent strength is necessarily considerably higher.

## AERATION

### West Side Plant

The average loading on the aeration section was 0.40 pounds of BOD per day per pound of MLSS, an increase in loading of approximately 17% over 1969. The average MLSS concentration was 1,420 mg/l.

### East Side Plant

The average loading on the aeration section was 0.19 pounds of BOD per day per pound of MLSS, a decrease of approximately 42% from 1969. The average MLSS concentration was 2,570 mg/l.

## SLUDGE DIGESTION and DISPOSAL

### West Side Plant

A total of 763,000 gallons of raw sludge was digested in 1970. Approximately 55% of this volume was returned to the treatment process as supernatant. A total of 2,119 cubic yards of digested sludge was removed by haulage.

### East Side Plant

A total of 1,154,000 gallons of raw sludge was digested. Approximately 97% of this volume was returned to the plant treatment process as supernatant. A total of 1,725 cubic yards of digested sludge was removed from the plant by haulage.

## **CONCLUSIONS**

Both the West Side and East Side Plants were overloaded hydraulically during the year. Despite this, the West Side Plant treated all raw sewage flows directed to it and produced an excellent quality effluent. The East Side Plant treated only a portion of the raw sewage flows directed to it and produced a good quality "treated" effluent. Bypassing of the treatment facilities occurred on a continuous basis at the East Side Plant during the year.

A contract for the first phase of the renovation works at the East Side Plant has been let to E.G. Marsh Limited and will be completed early in 1971. The installation of metering to measure total plant flows will provide an indication of the severity of bypassing.

## PROJECT COSTS

2-0047-59	
NET CAPITAL COST (Final)	\$625, 008. 36
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>-</u>
Long Term Debt to OWRC	<u>\$625, 008. 36</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	<u>\$147, 597. 71</u>
Net Operating	\$106, 960. 25
Debt Retirement	12, 613. 00
Reserve	2, 679. 46
Interest Charged	<u>35, 016. 85</u>
TOTAL	<u>\$157, 269. 56</u>

### RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 33, 722. 17
Deposited by Municipality	2, 679. 46
Interest Earned	<u>2, 173. 12</u>
	\$ 38, 574. 75
Less Expenditures	<u>3, 175. 37</u>
Balance @ December 31, 1970	\$ <u>35, 399. 38</u>

## PROJECT COSTS

2-0073-60	
NET CAPITAL COST (Final)	\$325, 199. 95
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>47, 154. 39</u>
Long Term Debt to OWRC	<u>\$278, 045. 56</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	<u>\$100, 940. 14</u>
Net Operating	\$ 43. 45
Debt Retirement	10, 088. 00
Reserve	1, 492. 09
Interest Charged	<u>15, 577. 84</u>
TOTAL	<u>\$ 27, 201. 38</u>

### RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 17, 685. 84
Deposited by Municipality	1, 492. 09
Interest Earned	<u>1, 177. 11</u>
	\$ 20, 355. 04
Less Expenditures	<u>-</u>
Balance @ December 31, 1970	<u>\$ 20, 355. 04</u>

## PROJECT COSTS

2-0108-62	
NET CAPITAL COST (Final)	\$291, 922. 10
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>165, 318. 57</u>
Long Term Debt to OWRC	<u>\$126, 673. 53</u>
 Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	 <u>\$ 39, 573. 08</u>
 Net Operating	 \$ 58. 45
Debt Retirement	4, 596. 00
Reserve	1, 051. 63
Interest Charged	<u>7, 097. 04</u>
 TOTAL	 <u>\$ 12, 803. 12</u>

### RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 9, 519. 58
Deposited by Municipality	1, 051. 63
Interest Earned	<u>640. 01</u>
	 \$ 11, 211. 22
Less Expenditures	 -
Balance @ December 31, 1970	 <u>\$ 11, 211. 22</u>

2-0047-59 (Special Operating Agreement)

RESERVE ACCOUNT

Balance @ January 1, 1970	\$10,728.84
Deposited by Municipality	4,686.37
Interest Earned	<u>810.55</u>
	\$16,225.76
Less Expenditures	<u>-</u>
Balance @ December 31, 1970	<u>\$16,225.76</u>

## 1970 OPERATING COSTS

• PAYROLL	65 %
• FUEL	1 %
• POWER	12 %
• CHEMICALS	2 %
• GENERAL SUPPLIES	4 %
• EQUIPMENT	< 1 %
• REPAIRS & MAINTENANCE	2 %
• SUNDRY	13 %
• WATER	< 1 %
• TRAVEL	< 1 %

## TOTAL ANNUAL COST

NET OPERATING	68 %
DEBT RETIREMENT	8 %
INTEREST	22 %
RESERVE FUND	2 %

## Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER MILLION GAL	COST PER LB OF BOD REMOVED
1966	682.86	\$65,868.62	\$ 96.46	13 cents
1967	802.96	72,358.82	88.87	11 cents
1968	926.85	78,488.49	84.68	12 cents
1969	963.6	97,206.18	100.88	12 cents
1970	1032.0	106,960.25	103.60	13 cents

# MONTHLY OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDY *	WATER	TRAVEL
JAN	7982.45	7788.56	-	114.44	-	-	21.68	-	-	57.77	-	-
FEB	8152.45	5498.69	-	234.49	1288.54	-	582.23	-	-	548.50	-	-
MAR	7675.38	5399.17	-	120.14	1297.76	264.91	277.69	-	-	315.75	-	-
APR	7601.31	5392.45	-	154.38	1196.64	-	305.86	87.57	162.50	301.91	-	-
MAY	8894.54	5922.70	148.07	128.14	1188.10	-	560.76	232.96	310.25	230.86	172.70	-
JUNE	7274.31	5409.33	221.65	87.98	863.41	-	217.82	46.20	207.29	171.55	-	49.08
JULY	8552.51	5244.40	80.31	57.62	1863.02	-	402.79	-	186.40	627.97	-	90.00
AUG	9395.63	7972.43	-	59.38	-	-	222.71	137.60	473.91	442.22	87.38	-
SEPT	1680.05	5357.81	91.20	73.05	949.01	-	176.74	-	(99.98)	(4867.78)	-	-
OCT	8154.00	5273.15	240.28	7.48	992.48	-	511.45	-	363.48	472.22	186.96	106.50
NOV	9292.04	5617.80	103.33	22.40	1017.71	1500.90	564.63	-	21.48	443.79	-	-
DEC	22305.58	3115.69	-	310.49	1743.74	324.90	453.63	-	799.01	15468.12	-	90.00
<b>TOTAL</b>	<b>106960.25</b>	<b>67992.18</b>	<b>884.84</b>	<b>1369.99</b>	<b>12400.41</b>	<b>2090.71</b>	<b>4297.99</b>	<b>504.33</b>	<b>2424.34</b>	<b>14212.84</b>	<b>447.04</b>	<b>335.58</b>

BRACKETS INDICATE CREDIT

\* SUNDY INCLUDES SLUDGE HAULAGE COSTS WHICH WERE 3,630.69

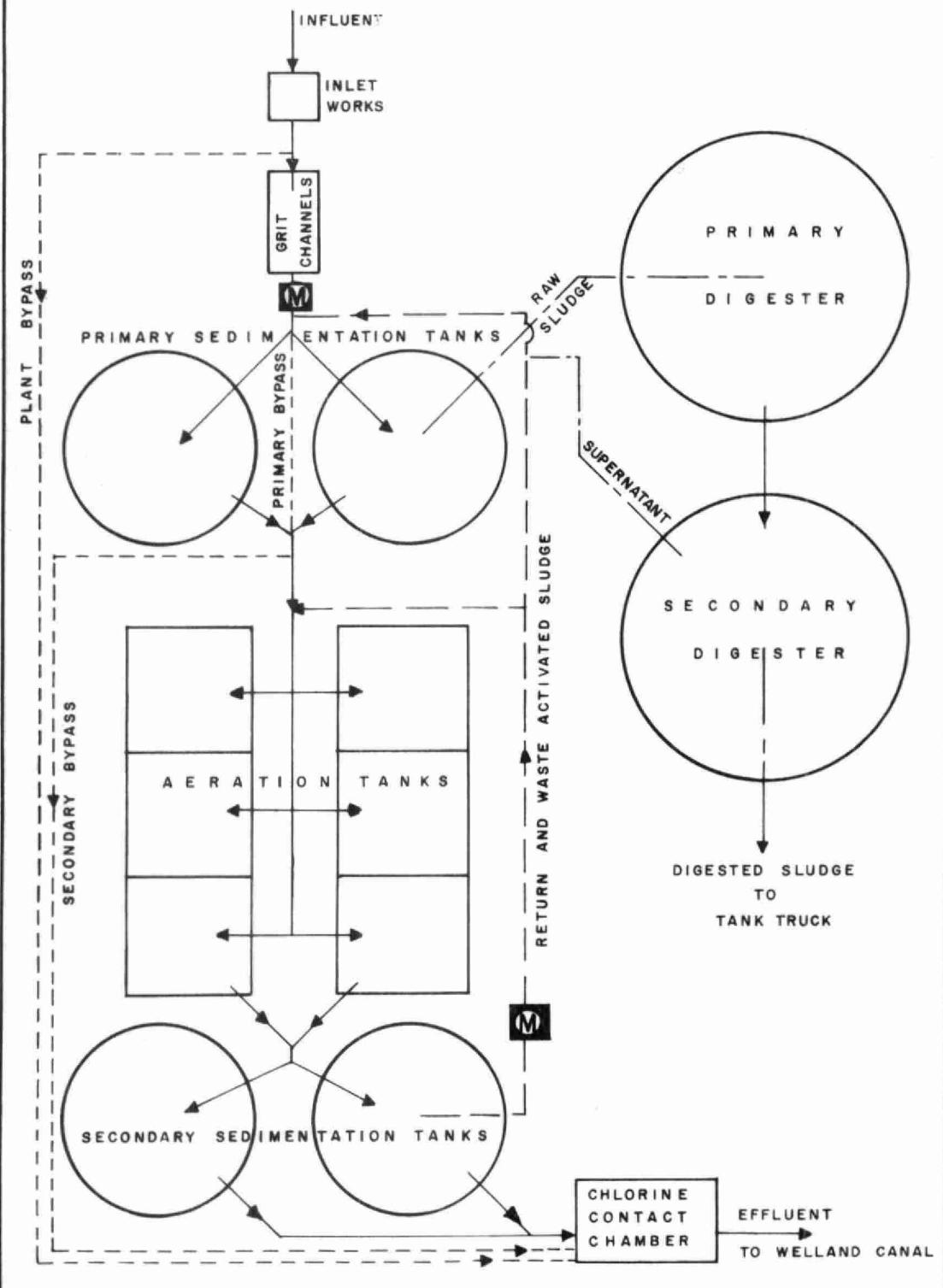
WEST SIDE PLANT

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**PROCESS DATA**

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**PORT COLBORNE WEST SIDE  
WATER POLLUTION CONTROL PLANT**



## DESIGN DATA

PROJECT NO.	2-0047-59	TREATMENT	Activated Sludge
DESIGN FLOW	0.90 mgd	DESIGN POPULATION	9,000
BOD - Raw Sewage - Removal	225 mg/l 93%	SS - Raw Sewage - Removal	300 mg/l 93%

### PRIMARY TREATMENT

#### Screening

Type: Manually cleaned  
Size: Two, 1" spacing

#### Grit Removal

Type: Channels  
Size: Two 40' 4" x 1' 10" (838 gal)  
Retention: 0.67 min (one channel)  
Velocity: 1 fps

#### Primary Sedimentation

Type: Dorr  
Size: Two 50' dia x 9' swd  
(220,000 gal)  
Retention: 5.9 hr  
Loading: Surface, 229 gal/ft<sup>2</sup>/day  
Weir, 2,860 gal/ft/day

### SECONDARY TREATMENT

#### Aeration Tanks

Type: Mechanical  
Size: Six 30' x 30' x 10½' cells  
(326,000 gal)  
Retention: 8.8 hr

#### Aerators

- Six Ames Crosta Mills

### Secondary Sedimentation

Type: Ames Crosta  
Size: Two 45' dia x 8' (159,500 gal)  
Retention: 4.24 hr  
Loading: Surface, 282 gal/ft<sup>2</sup>/day  
Weir, 3,200 gal/ft/day

#### CHLORINATION

Type: W & T  
Size: Two 400 lb/day

#### Chlorine Contact Chamber

Size: 100,000 gal  
Retention: 16 min

#### OUTFALL

- to Welland Canal

#### SLUDGE HANDLING

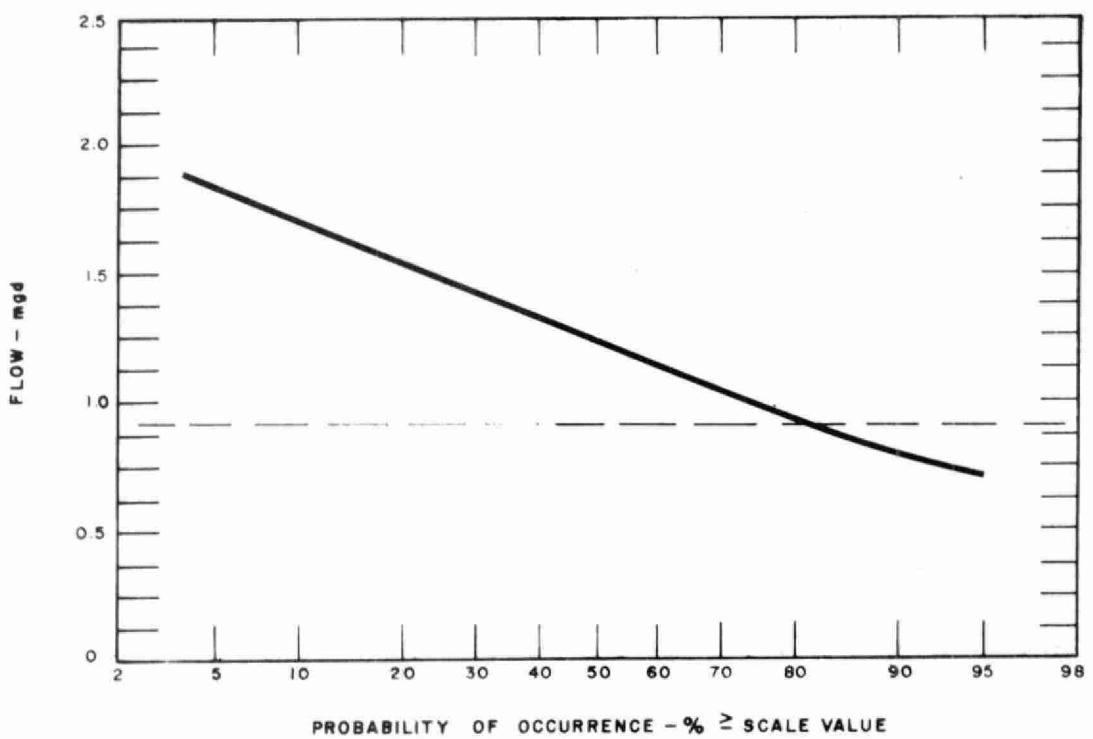
##### Digestion System - Two-stage

##### Primary --

Type: Dorr, 1 draft tube mixer  
Size: One 35' dia x 22' swd (21,200  
cu ft or 0.132 mil gal)  
Loading: 3.56 lb/cu ft/mo

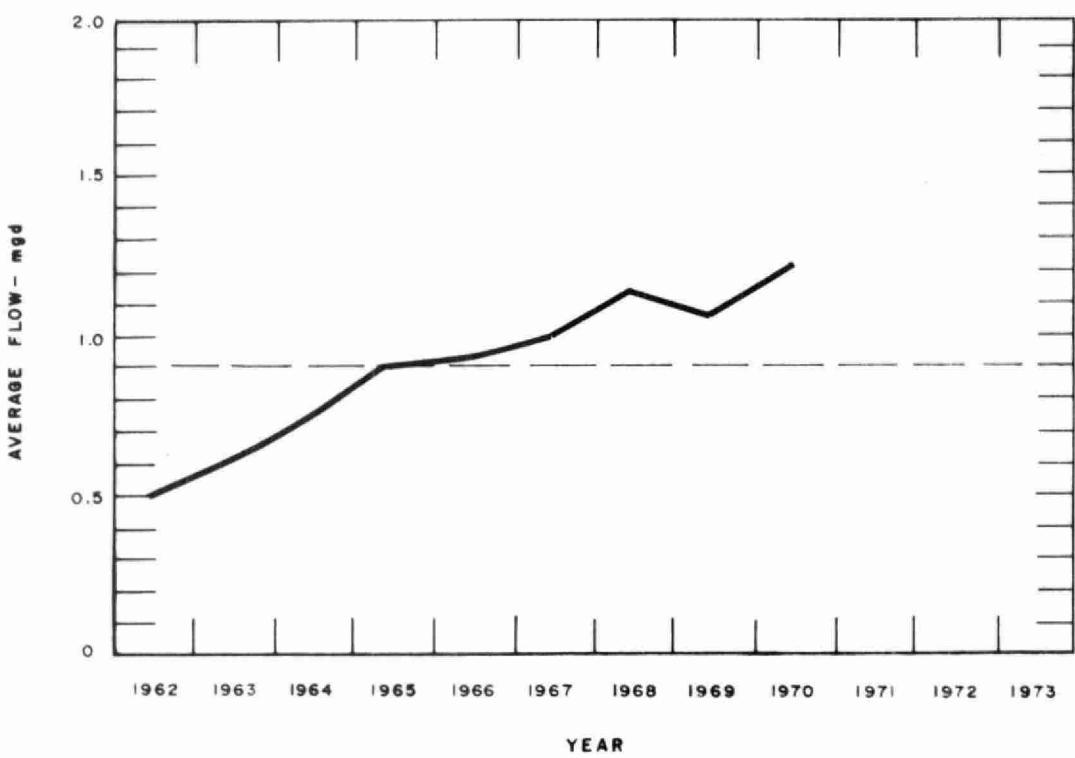
##### Secondary --

Size: One 30' dia x 19' swd (13,400  
cu ft or 83,500 gal)  
Total Loading: 218 lb/cu ft/mo



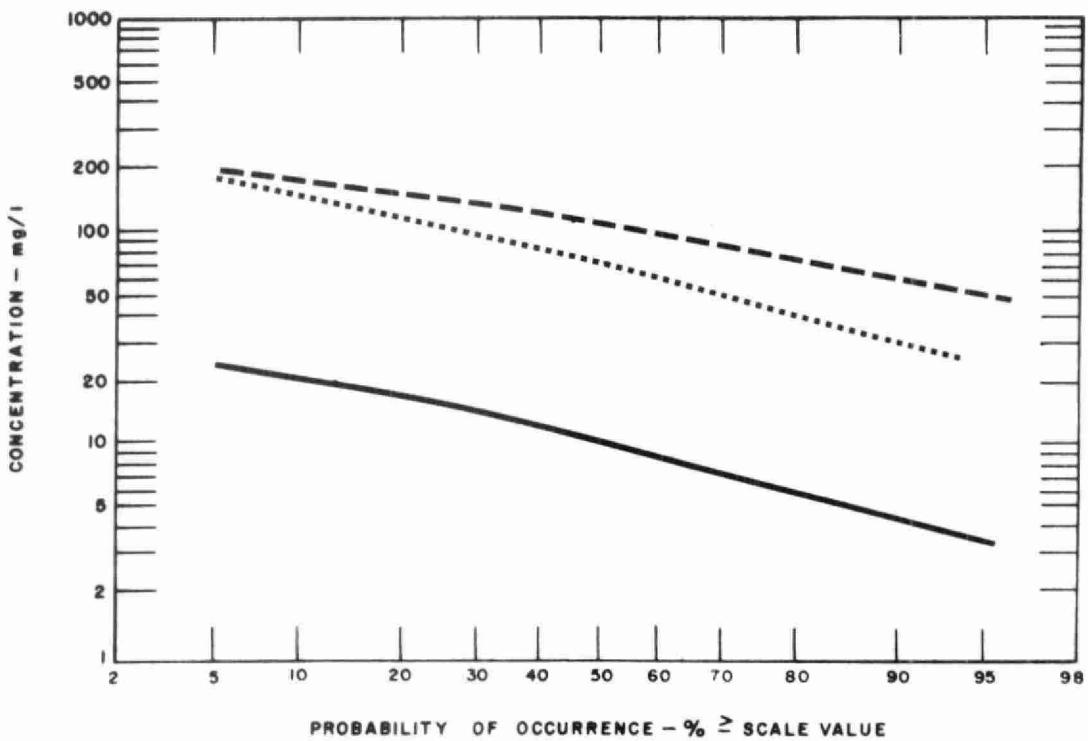
## FLows

NOMINAL CAPACITY ——————

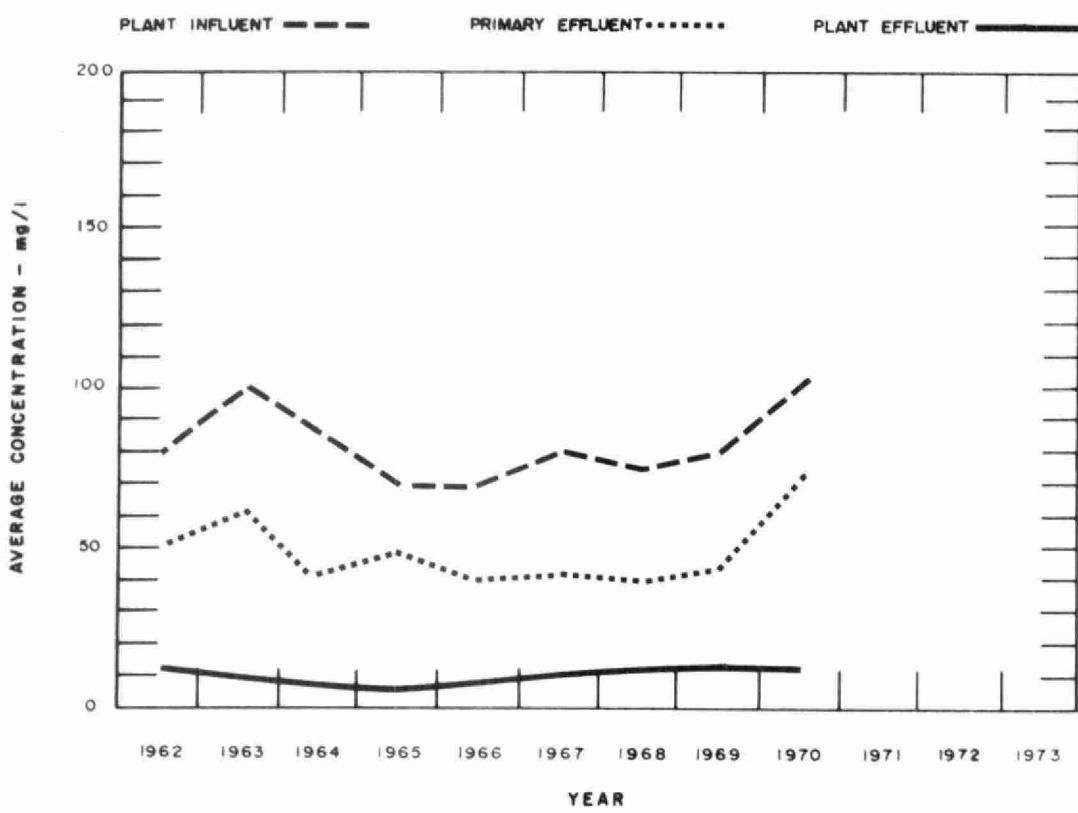


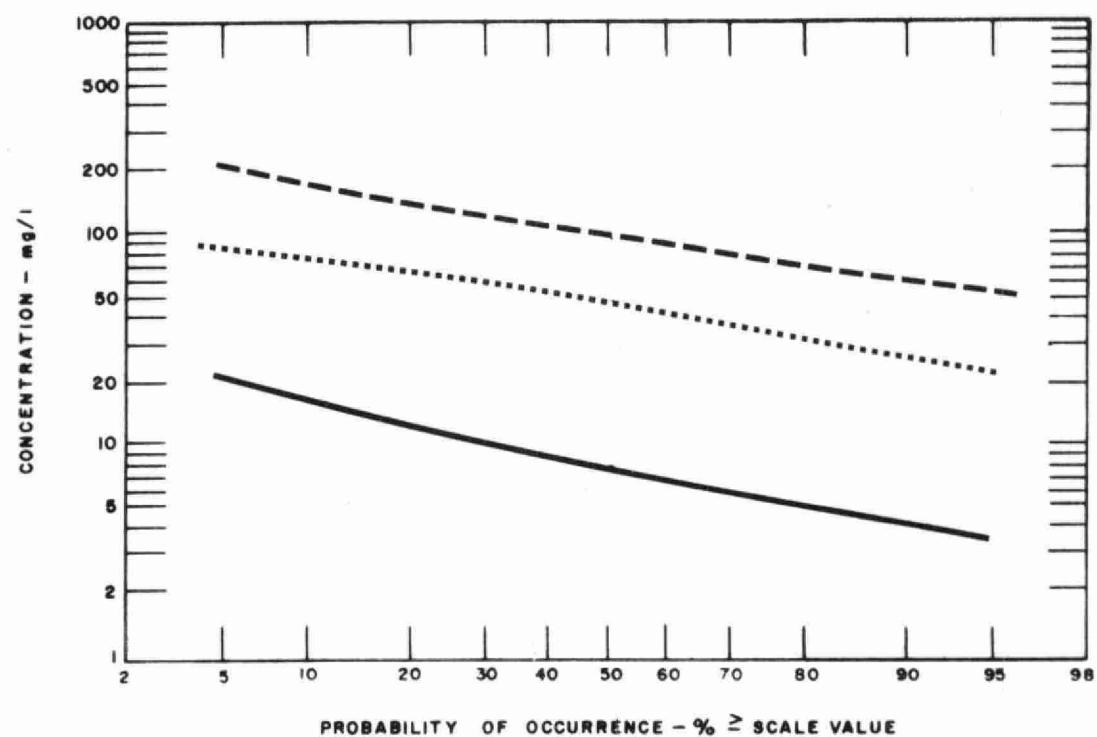
## PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal	CHLORINE USED pounds	DOSAGE mg/l
JAN	33.4	1.08	2.2	.9	980	2.9
FEB	38.9	1.39	2.1	1.0	960	2.5
MAR	48.5	1.56	2.3	1.1	940	1.9
APR	43.5	1.45	2.5	.9	850	1.9
MAY	31.7	1.02	1.3	.8	950	3.0
JUNE	30.5	1.02	1.3	.8	920	3.0
JULY	35.2	1.14	1.8	.9	1060	3.1
AUG	33.2	1.08	1.6	.9	1080	3.3
SEPT	33.6	1.12	1.6	.9	940	2.8
OCT	38.2	1.23	2.2	.9	1050	2.7
NOV	41.3	1.38	1.9	1.0	1200	2.9
DEC	40.5	1.30	2.3	.8	1160	2.9
TOTAL	448.5	-	-	-	12090	-
AVERAGE	-	1.23	-	-	1010	2.7

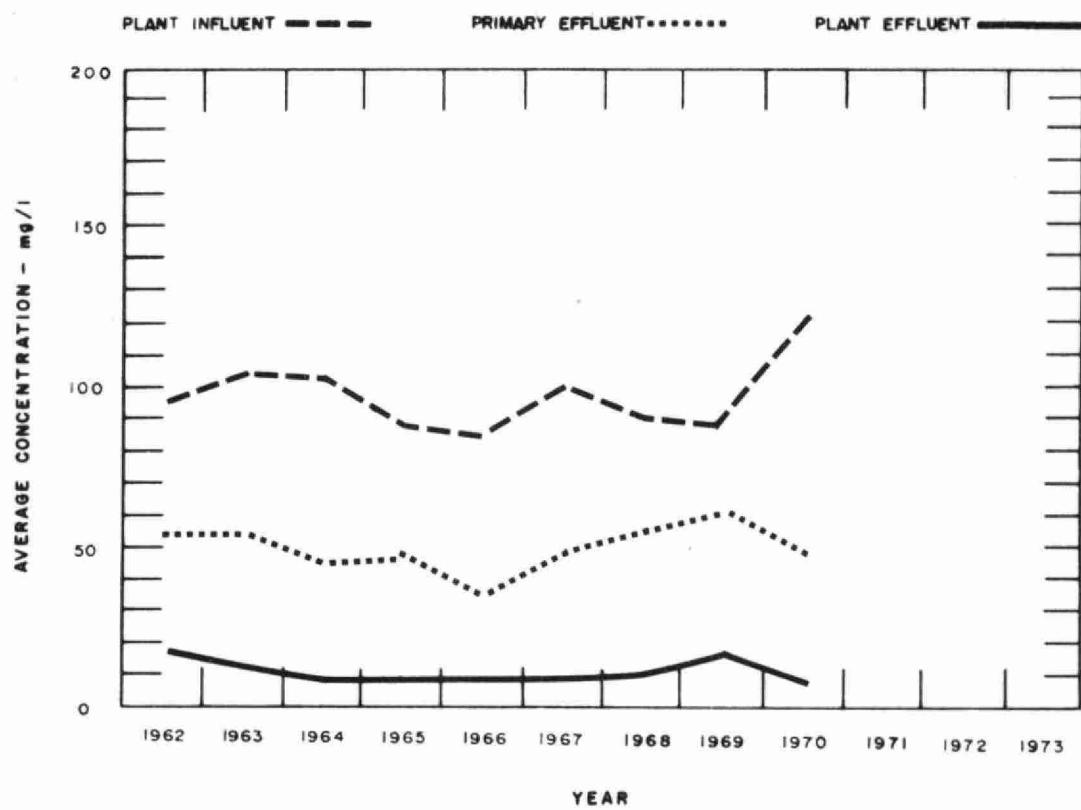


## BIOCHEMICAL OXYGEN DEMAND





## SUSPENDED SOLIDS



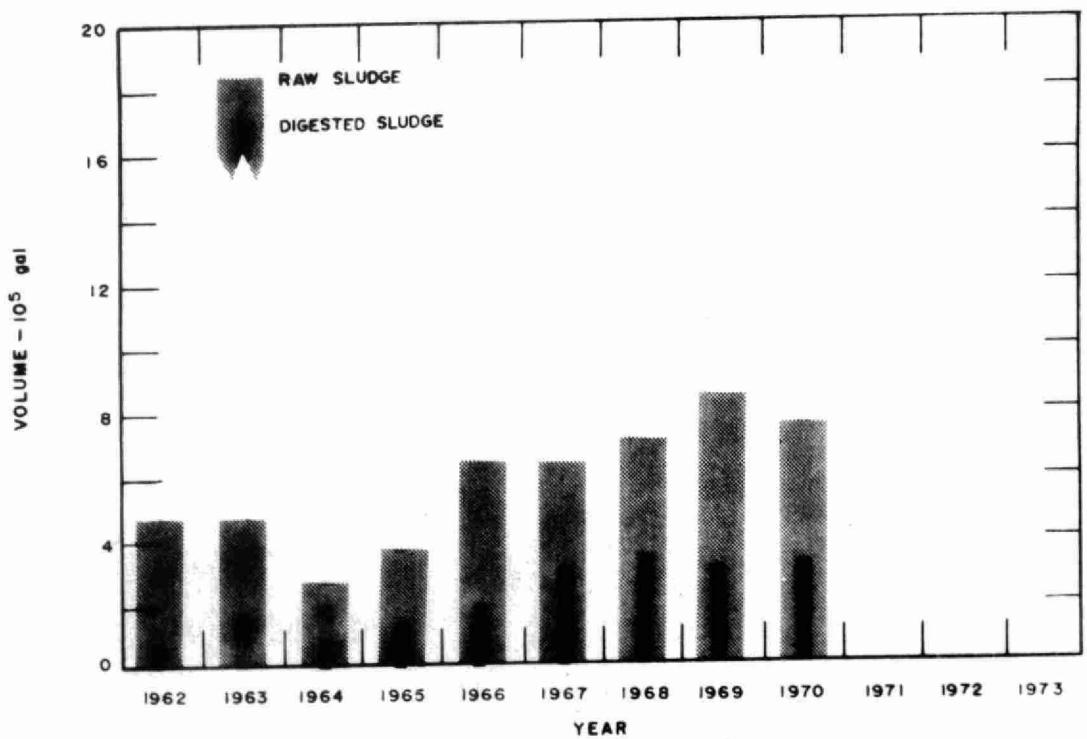
## PLANT EFFICIENCY

MONTH	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS						GRIT REMOVED cu ft	
	INFLUENT		EFFLUENT		REDUCTION		INFLUENT		EFFLUENT		REDUCTION			
	n	mg/l	n	mg/l	%	$10^3$ pounds	n	mg/l	n	mg/l	%	$10^3$ pounds		
JAN	3	118	3	15	87	34	6	111	6	18	84	31	34	
FEB	6	89	6	22	86	26	6	92	6	9	91	32	14	
MAR	8	91	8	6	93	41	8	94	8	5	95	43	24	
APR	6	93	6	6	94	38	6	105	6	4	96	44	32	
MAY	6	118	6	6	95	36	6	138	6	6	96	42	0	
JUNE	6	114	6	10	91	32	5	160	5	5	97	47	20	
JULY	6	115	6	5	96	39	7	105	7	8	92	34	0	
AUG	1	65	1	7	89	19	2	101	2	9	93	30	0	
SEPT	8	107	8	7	93	34	7	96	7	10	90	29	0	
OCT	5	72	5	7	90	25	6	196	6	11	94	71	54	
NOV	4	133	4	19	86	47	5	154	5	7	95	61	20	
DEC	4	104	4	14	87	36	4	114	4	8	93	43	0	
TOTAL	63	-	63	-	-	407	68	-	68	-	-	507	198	
AVERAGE	-	103	-	10	90	34	-	121	-	8	93	42	-	

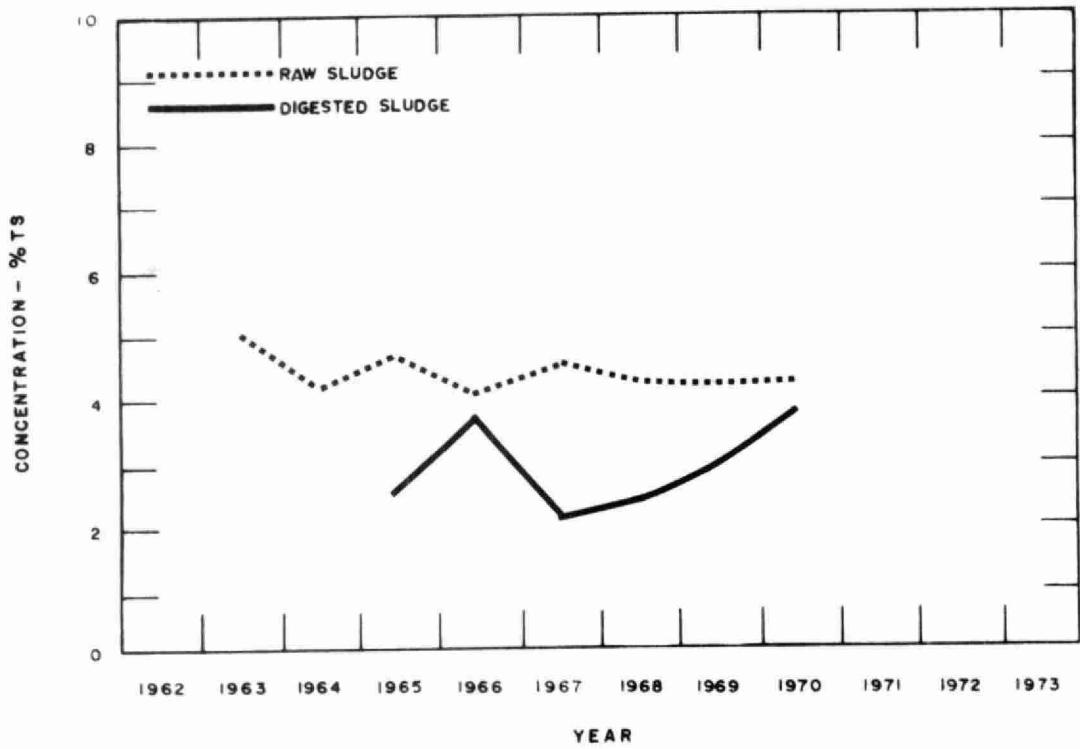
NOTE - n is the number of samples taken

## AERATION

MONTH	AVG DAILY FLOW mil gal	AERATION INF.		SECONDY. EFF.		MLSS CONCN mg/l	F/M lb BOD lb MLSS	AIR USED 1000 cuft lb BOD	WASTE SLUDGE lb/DAY
		BOD mg/l	SS CONCN mg/l	BOD mg/l	SS CONCN mg/l				
JAN	1.1	83	43	15	18	1200	.5	-	-
FEB	1.4	55	28	22	9	1300	.4	-	-
MAR	1.6	66	37	6	5	870	.8	-	-
APR	1.4	58	41	6	4	1280	.4	-	-
MAY	1.0	91	49	6	6	1490	.4	-	-
JUNE	1.0	84	60	10	5	1500	.4	-	-
JULY	1.1	93	60	5	8	1700	.4	-	-
AUG	1.1	44	47	7	9	1490	.2	-	-
SEPT	1.1	72	56	7	10	1620	.3	-	-
OCT	1.2	40	53	7	11	1800	.2	-	-
NOV	1.4	101	67	19	7	1520	.6	-	-
DEC	1.3	72	43	14	8	1230	.5	-	-
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.2	73	48	10	8	1420	.4	-	-



## DIGESTION



## SLUDGE DIGESTION and DISPOSAL

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME $10^3$ gal	TOTAL SOLIDS %	VOL SOLIDS %	VOLUME $10^3$ gal	TOTAL SOLIDS %	VOL SOLIDS %	VOLUME $10^3$ gal	TOTAL SOLIDS %	DEWATERED cu yd	LIQUID cu yd
JAN	44	5.6	84	34	4.3	63	19	2.7	-	201
FEB	72	3.7	82	30	3.7	64	26	1.9	-	176
MAR	74	3.8	81	25	3.2	66	44	1.6	-	151
APR	51	4.5	80	15	3.8	63	31	1.4	-	88
MAY	79	4.1	81	47	3.4	63	41	1.3	-	277
JUNE	66	4.3	78	30	3.2	63	35	1.4	-	176
JULY	65	4.2	76	43	3.1	61	23	1.6	-	258
AUG	65	5.0	78	30	-	-	44	-	-	176
SEPT	59	4.3	74	15	-	-	44	1.6	-	88
OCT	61	6.1	63	30	4.1	58	48	2.1	-	176
NOV	62	5.0	74	30	-	-	36	2.2	-	176
DEC	65	5.0	72	30	5.9	53	35	1.7	-	176
TOTAL	763	-	-	359	-	-	416	-	-	2119
AVERAGE	64	4.6	77	30	3.9	62	35	1.8	-	177

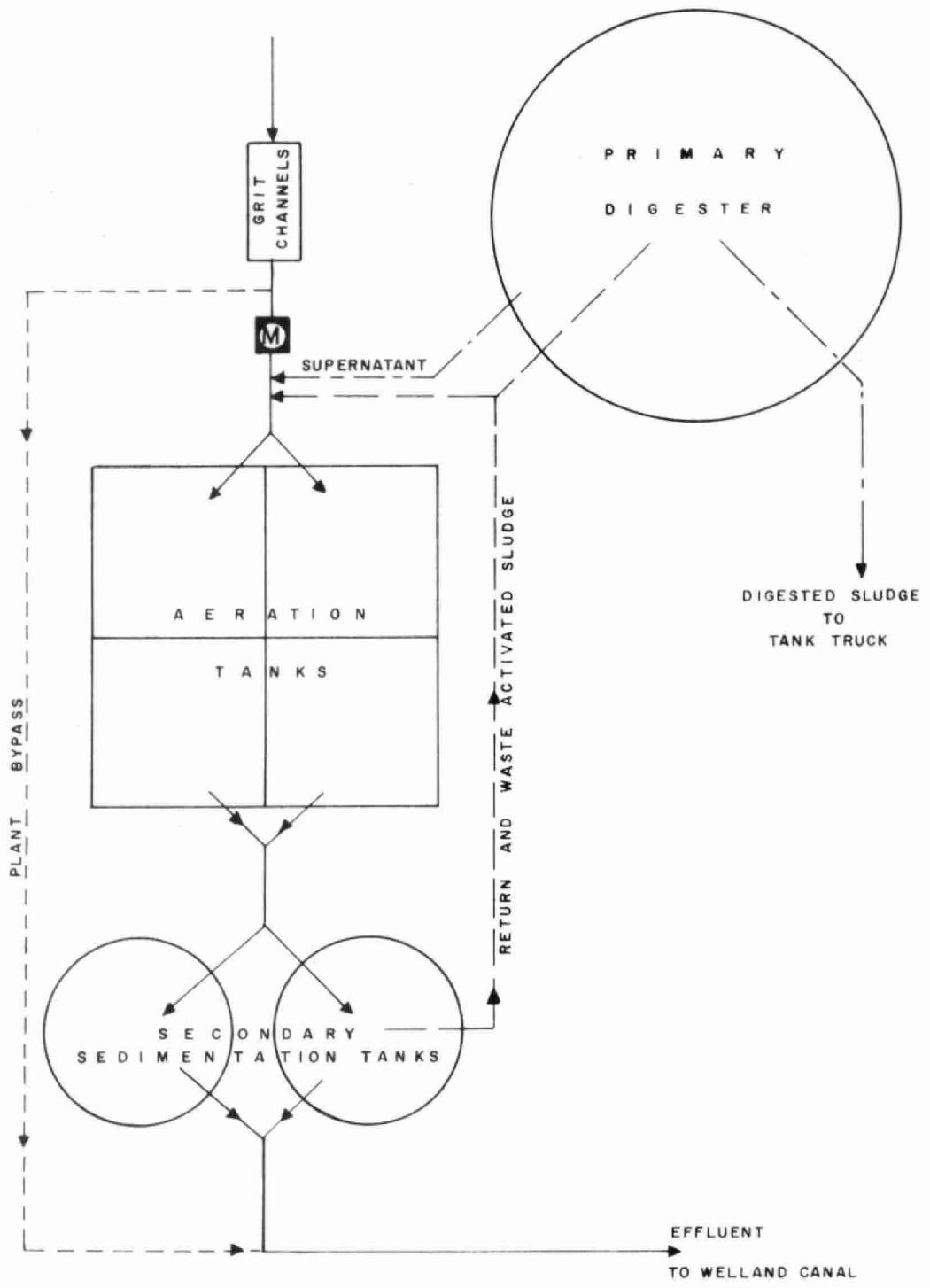
EAST SIDE PLANT

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**PROCESS DATA**

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PORT COLBORNE EAST SIDE  
WATER POLLUTION CONTROL PLANT



## DESIGN DATA

PROJECT NO.	2-0047-59	TREATMENT	Activated Sludge
DESIGN FLOW 0.85 mgd			

### PRIMARY TREATMENT

#### Screening

- Two at head of grit channels

#### Grit Removal

Type: Channels, manually cleaned  
Size: Two 15' long

#### Comminution

- One Jones-Atwood

#### Primary Sedimentation

- Not provided

### SECONDARY TREATMENT

#### Aeration Tanks

Type: Mechanical  
Size: Four 30' x 30' x 16' (276,000 gal)  
Retention: 7.8 hr

#### Aerators

- Four Ames Crosta

#### Secondary Sedimentation

Type: Ames Crosta  
Size: Two 30' dia x 8' swd (70,400 gal)  
Retention: 2.0 hr  
Loading: Surface, 600 gal/ft<sup>2</sup>/day  
Weir, 4,520 gal/ft/day

#### CHLORINATION

- not provided

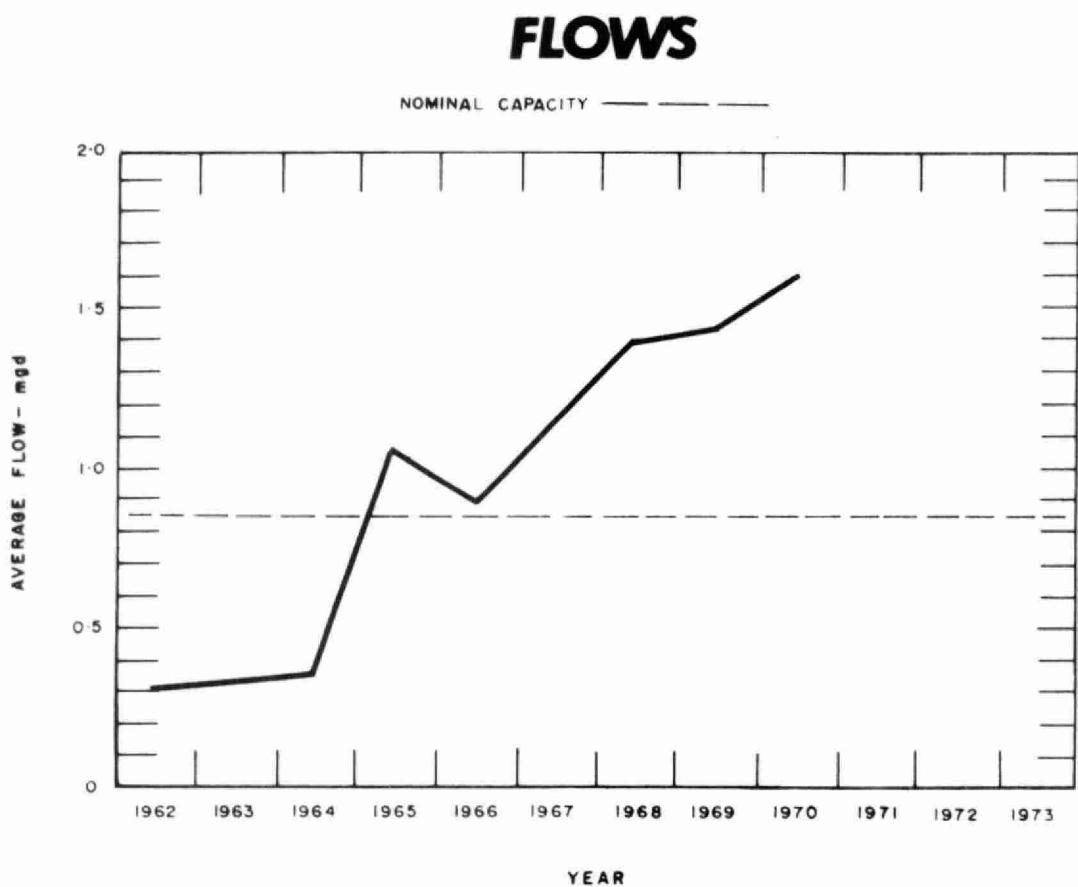
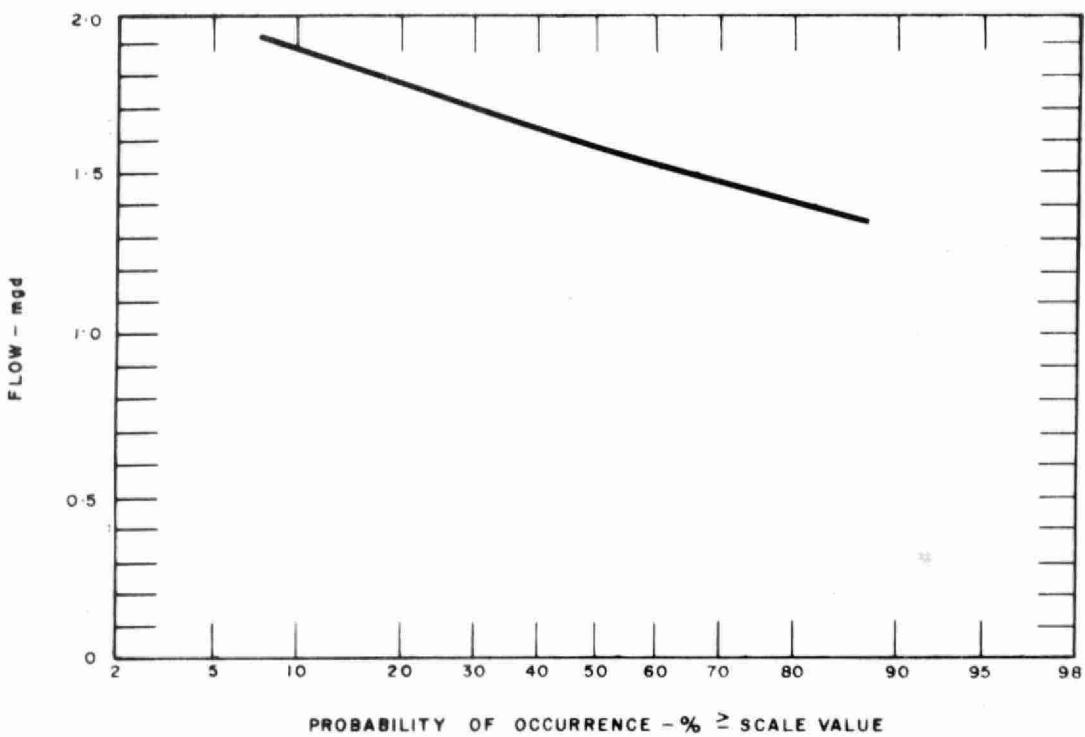
#### OUTFALL

- to Welland Canal

#### SLUDGE HANDLING

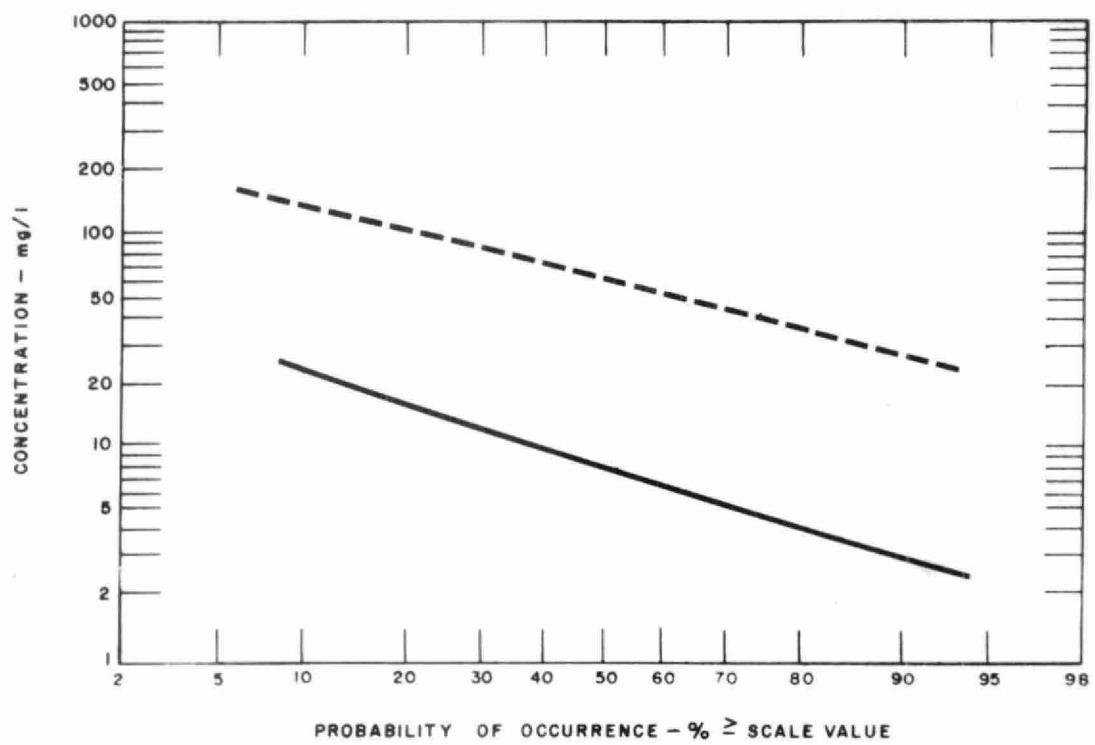
#### Digestion System - Single-stage

Type: PFT mixed by recirculation  
Size: One 50' dia x 23' swd (44,800 cu ft  
or 0.28 mil gal)

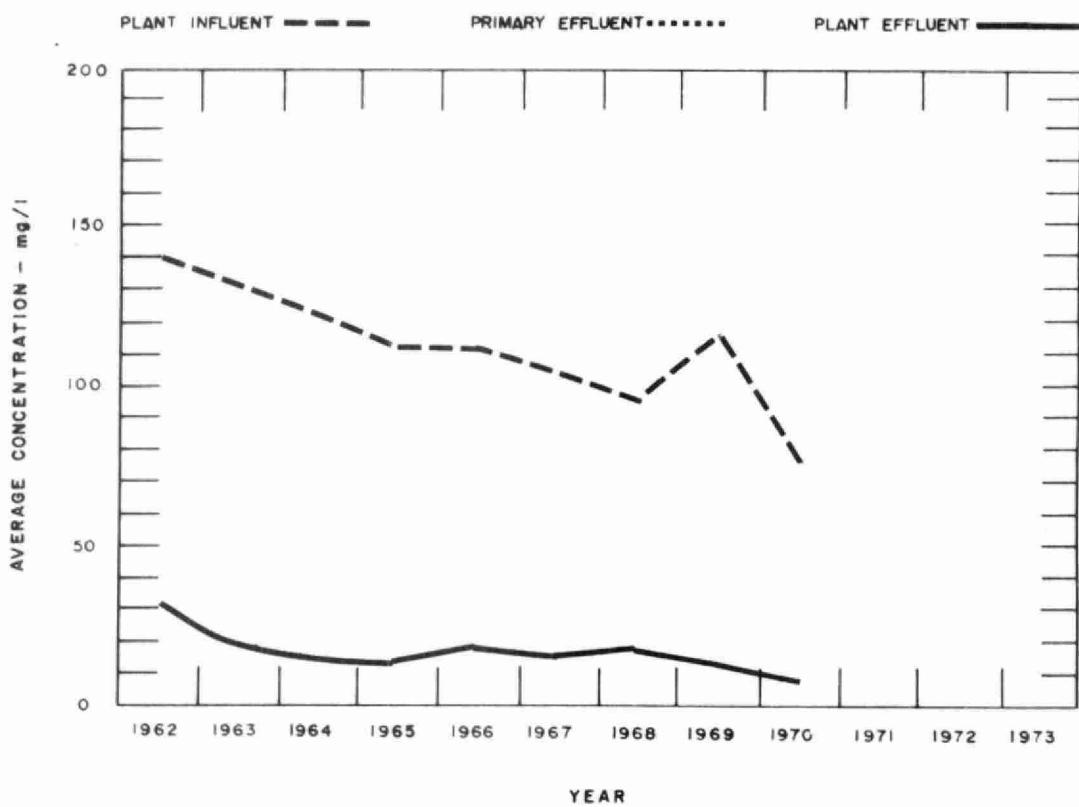


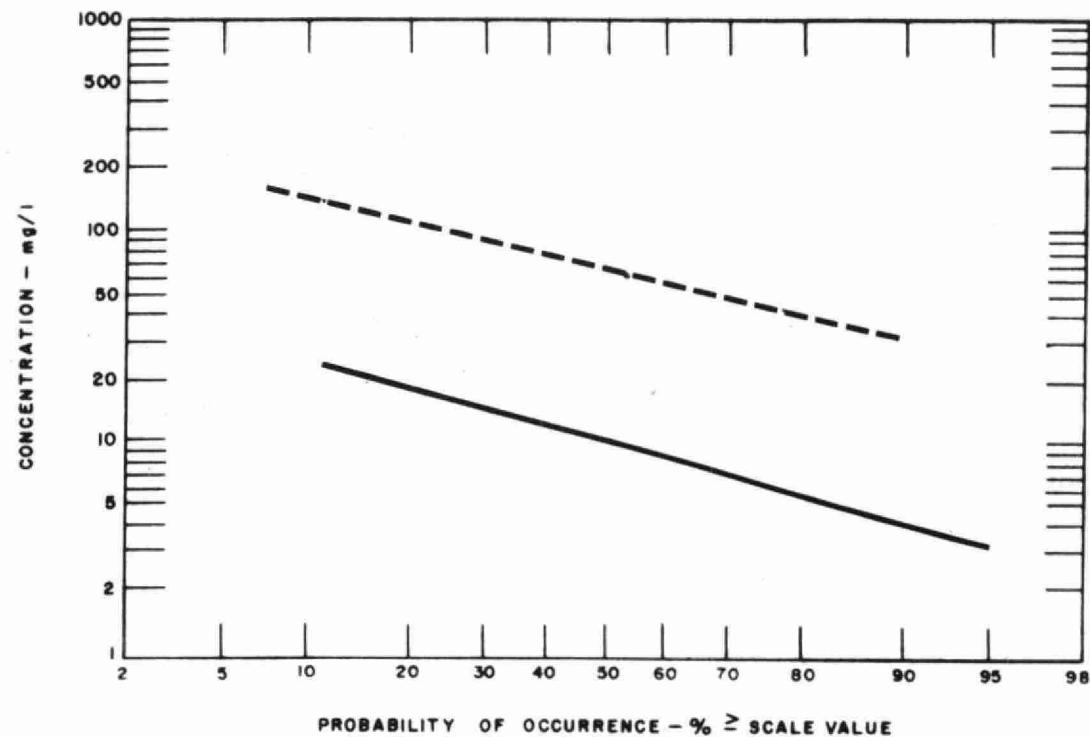
## PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal	CHLORINE USED	DOSAGE mg/l
JAN	50.2	1.62	2.0	1.3	0	0
FEB	51.5	1.84	2.0	1.7	0	0
MAR	56.1	1.80	2.0	1.6	0	0
APR	48.4	1.61	2.0	1.4	0	0
MAY	45.3	1.46	1.8	1.3	0	0
JUNE	42.1	1.40	1.7	1.3	0	0
JULY	47.6	1.54	2.0	1.2	0	0
AUG	46.6	1.50	1.8	1.4	0	0
SEPT	45.5	1.52	2.0	1.4	0	0
OCT	48.0	1.55	2.0	1.4	0	0
NOV	51.6	1.72	2.0	1.5	0	0
DEC	50.6	1.63	2.0	1.4	0	0
<b>TOTAL</b>	<b>583.5</b>	-	-	-	0	0
<b>AVERAGE</b>	-	1.60	1.9	1.4	0	0

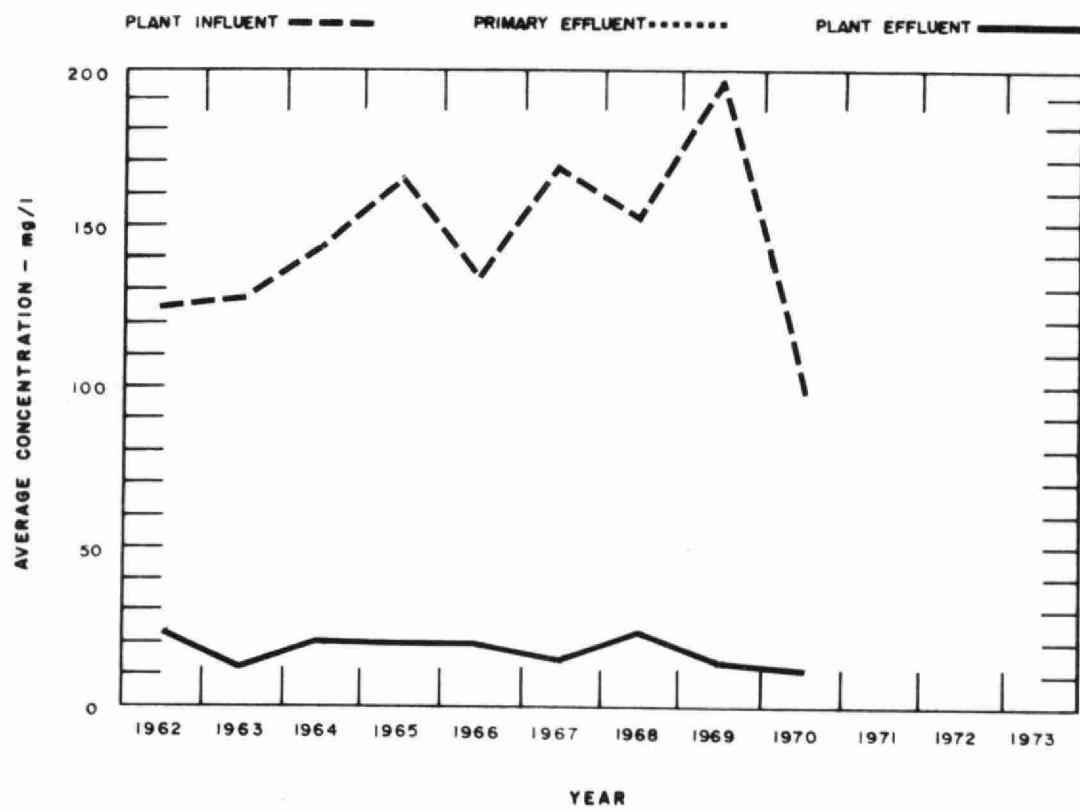


## BIOCHEMICAL OXYGEN DEMAND





## SUSPENDED SOLIDS



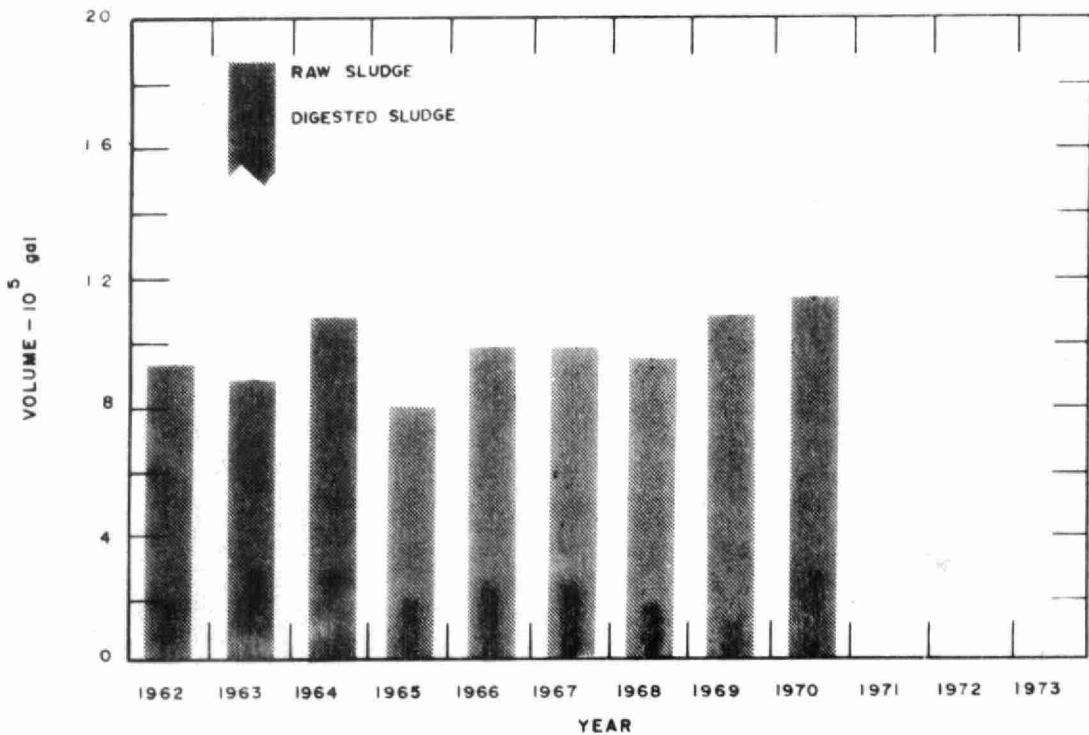
## PLANT EFFICIENCY

MONTH	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS						GRIT REMOVED cu ft	
	INFLUENT		EFFLUENT		REDUCTION		INFLUENT		EFFLUENT		REDUCTION			
	n	mg/l	n	mg/l	%	$10^3$ pounds	n	mg/l	n	mg/l	%	$10^3$ pounds		
JAN	2	55	2	9	84	23	6	67	6	20	70	24	38	
FEB	6	48	5	14	71	18	6	61	6	17	72	23	53	
MAR	8	84	8	7	92	43	8	85	8	12	86	41	40	
APR	6	54	6	6	89	23	6	89	6	13	85	37	58	
MAY	6	61	6	4	93	26	6	126	6	11	91	52	46	
JUNE	6	89	6	8	91	34	5	165	5	13	92	64	92	
JULY	5	41	5	6	85	17	6	42	6	8	81	16	80	
AUG	1	190	1	3	98	87	2	188	2	7	96	84	82	
SEPT	8	53	8	8	85	20	7	73	7	8	89	30	94	
OCT	5	166	5	19	89	70	6	143	6	14	90	62	34	
NOV	4	107	4	17	84	46	5	115	5	6	95	56	64	
DEC	4	83	4	11	87	36	4	120	4	6	95	58	62	
TOTAL	61	-	60	-	-	443	67	-	67	-	-	544	743	
AVERAGE	-	77	-	9	88	37	-	99	-	12	88	45	62	

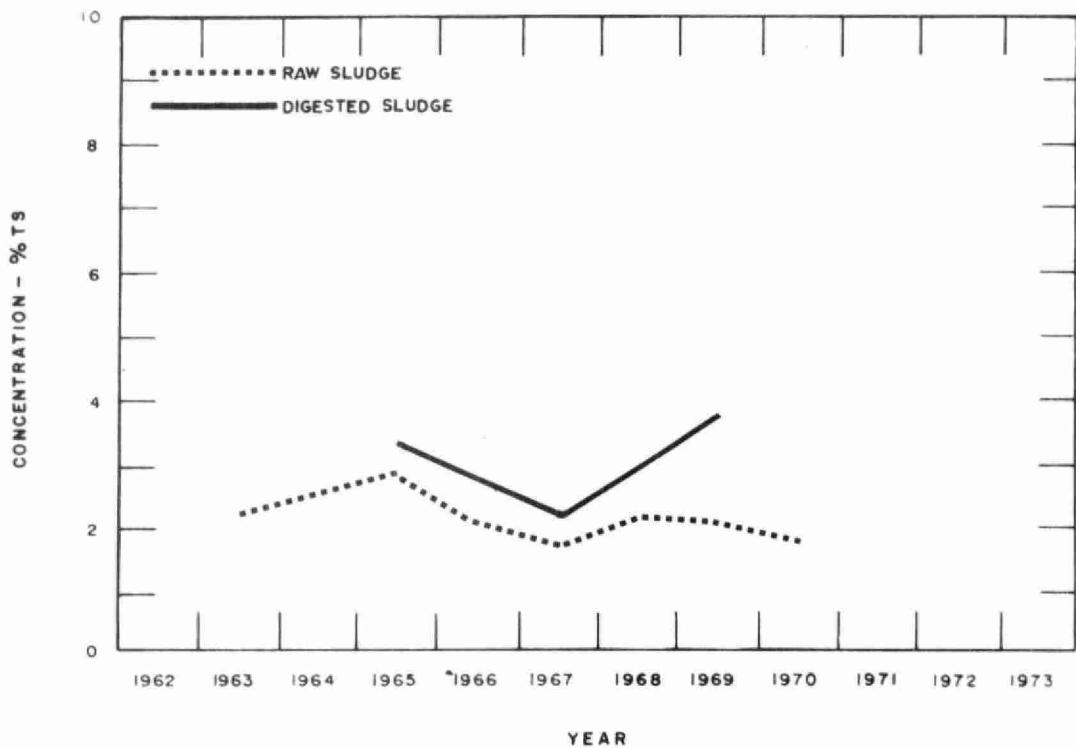
NOTE - n is the number of samples taken

## AERATION

MONTH	AVG DAILY FLOW mil gal	AERATION INF.		SECONDY. EFF.		MLSS CONCN mg/l	F/M lb MLSS	AIR USED 1000 cu ft lb BOD	WASTE SLUDGE lb/DAY
		BOD	SS CONCN mg/l	BOD	SS CONCN mg/l				
JAN	1.6	55	67	9	20	2420	.13	-	480
FEB	1.8	48	61	14	17	1980	.16	-	570
MAR	1.8	84	85	7	12	1930	.28	-	570
APR	1.6	54	89	6	13	2230	.14	-	650
MAY	1.5	61	126	4	11	2330	.14	-	660
JUNE	1.4	89	165	8	13	2690	.16	-	720
JULY	1.5	41	42	6	8	3020	.07	-	580
AUG	1.5	190	188	3	7	2970	.34	-	600
SEPT	1.5	53	73	8	8	2920	.10	-	490
OCT	1.6	166	143	19	14	2860	.34	-	540
NOV	1.7	107	115	17	6	2680	.25	-	410
DEC	1.6	83	120	11	6	2810	.17	-	450
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.6	77	99	9	12	2570	.19	-	560



## DIGESTION



## SLUDGE DIGESTION and DISPOSAL

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME $10^3$ gal	TOTAL SOLIDS %	VOL SOLIDS %	VOLUME $10^3$ gal	TOTAL SOLIDS %	VOL SOLIDS %	VOLUME $10^3$ gal	TOTAL SOLIDS %	DEWATERED cu yd	LIQUID cu yd
									-	-
JAN	92	1.6	79	30	-	-	90	1.1	-	176
FEB	80	2.0	82	8	-	-	71	1.3	-	50
MAR	93	1.9	76	21	-	-	94	1.2	-	126
APR	89	2.2	78	19	-	-	94	1.4	-	113
MAY	92	1.9	78	26	-	-	96	-	-	151
JUNE	90	2.4	75	0	-	-	86	1.5	-	0
JULY	94	1.9	71	17	-	-	90	1.5	-	101
AUG	123	1.5	68	34	-	-	103	-	-	202
SEPT	98	1.5	69	36	-	-	92	-	-	214
OCT	120	1.4	71	30	-	-	124	-	-	176
NOV	90	1.3	73	45	-	-	89	-	-	265
DEC	93	1.5	73	26	-	-	94	1.3	-	151
TOTAL	1154	-	-	292	-	-	1123	-	-	1725
AVERAGE	96	1.8	74	-	-	-	94	1.3	-	157

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